

THE STORAGE AND SEASONING OF CROSSARMS.

1. GENERAL.

1.1 Crossarms are equal in importance to poles and call for even greater care in handling for, although they do not contain sapwood and do not come into contact with the ground after erection and are therefore not so liable to the attack of decay fungus and termites, yet they are more susceptible to warping and twisting and other mechanical defects, therefore, stacking methods which are designed to prevent these troubles during seasoning are necessary.

1.2 Crossarms behave best if delivered during March and the months immediately following. If they are in a "green" condition, it is necessary to store them so that they dry out evenly, and not too quickly, to a moisture content of about 20% or less in dry localities. Before arms are issued from seasoning depots, 1% of each stack should be checked by Foreman in charge to ensure that the moisture content is below 20%, using the method described in PA 9601.

2. END-SEALING.

2.1 When the arms are received the ends should be sealed by coating them with petroleum jelly. This will prevent the ends, where the cells have been cut, drying out faster than the body of the crossarm. It is this faster drying which causes splitting to commence at the ends.

3. STACKING.

3.1 Proper stacking is of paramount importance. An even air circulation is essential if seasoning of the crossarms is to proceed uniformly and distortion of the arms is to be avoided. Under normal conditions several thousand million cubic feet of air are necessary to dry out a stack of crossarms about 15 feet high and the importance of the proper circulation of this air is obvious. This can only be obtained by proper stacking methods.

3.2 The same considerations in regard to foundations exist as with poles. The ground must be clear of weeds and well drained, and the foundations which should be about 18 inches high should be made of concrete, brick or earthenware pillars placed about 3 feet apart in the form of a square as shown in Fig. 1. The sides of the square should be 108 inches or 80 inches long depending upon the length of the arms to be stacked. The use of old arms laid horizontally on the ground is bad practice. It retards air circulation and is likely to induce infection in the arms. The additional expenditure for proper foundations will be justified by the lower percentage of unsatisfactory arms. In order that the stack be as stable as possible, it is undesirable for the arms to overlap the pillars. The tops of the pillars must be in the same plane as otherwise distortion of arms in the lower layers is likely.

3.3 If the ground round the pillars and under the stack is surfaced with a thin mix of

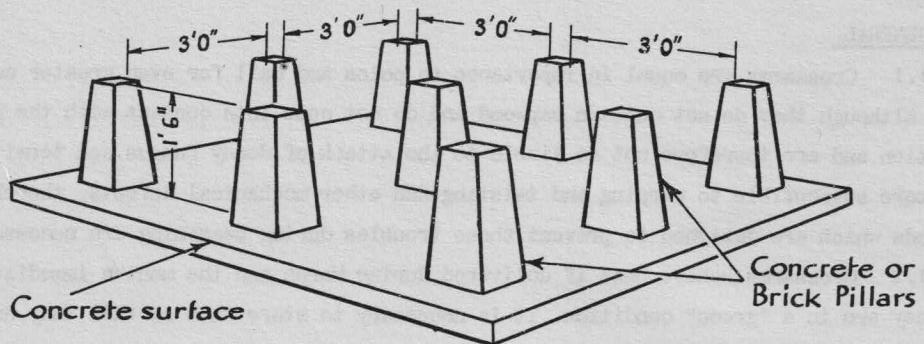


Fig.1. Foundation for Crossarm Stack .

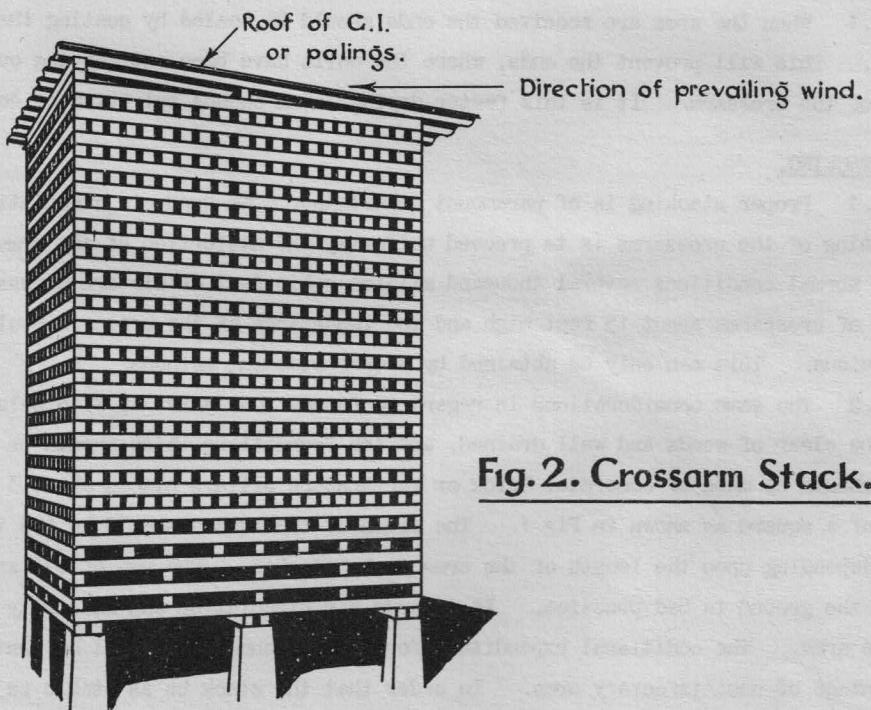


Fig.2. Crossarm Stack.

concrete, drainage will be easier and the growth of weeds will be inhibited. The extra expense involved will be repaid by the reduced maintenance charges and the improved appearance of the yard.

3.4 The best way of stacking is to place two arms across each row of pillars in one direction to act as sills and then to lay the next layer of arms at the appropriate spacing at right angles to the sills. The next row will be parallel to the sills, and so on; each row being at right angles to its adjacent row. The method is shown in Fig.2, in which it will be seen that although the spacing on the upper layers is less than on the lower levels, care has been taken to maintain the crossarms over the sills immediately above one another. This precaution reduces the tendency of the crossarms to distort. With the relatively close spacing specified above it is not so important, but where wider spacing is used it will be found that, unless this method is followed, there is a tendency for the arms in the lower layer to be deformed.

3.5 Since conditions for drying are better at the top of the stack, the spacing of the arms at the bottom should be somewhat wider than at the top. The spacing between stacks and between arms depends upon variable conditions and cannot be specified definitely. An indication of the best practice for average conditions can be given.

3.51 In a yard where the natural drying conditions are good, the spacing of the stacks, and of the arms in the stacks, should be closer than in localities where the drying conditions are bad.

3.52 Timber which is received with a high moisture content may be stacked with somewhat wider spacing than partly seasoned timber, other things being equal.

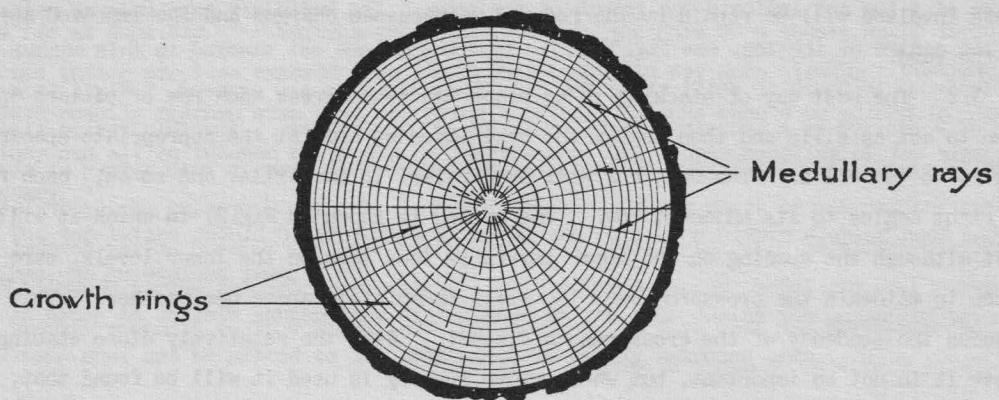
3.53 Timber subject to deformation during drying (such as mountain ash) should be stacked more closely to prevent too rapid drying.

3.54 For average yard conditions with timber which is not subject to serious deformation during drying (such as tallow-wood, ironbark or jarrah) and which is received in a partly dried condition, say a month or six weeks after cutting, the spacing between the arms in the stack should be about 2 inches at the bottom, gradually reducing until it is about one half inch at the top.

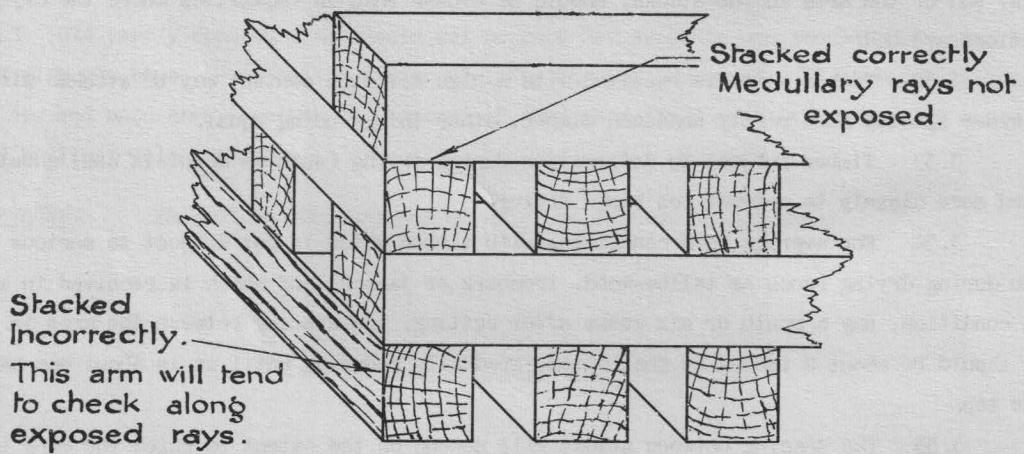
3.55 The spacing between stacks will depend on the extent to which the yard is enclosed. In a large open yard subject to wind from all directions, 18 inches between stacks may suffice, while several feet apart may be necessary in a small enclosed yard to ensure adequate drying.

3.56 The arms must be stacked evenly. The provision of "chimneys" between groups of arms in a stack is bad practice leading to uneven drying.

3.6 The arms in the outside of a stack should be placed so that the sides or faces through which the medullary rays show are not exposed, i.e., the growth rings are at right angles to the



(a) Section of Tree Trunk
Showing growth rings & medullary rays.



**(b) Correct & Incorrect Method of
Stacking Cross Arms.**

Fig. 3.

exposed face as shown in Fig. 3. (Growth rings are the circular rings which show in a cross-section of a log and indicate the growth of the tree. The medullary rays show as radial lines from the centre of the log, see Fig. 3(a).) If the arms are not stacked in this manner there is a tendency to check or split along the face where the rays are exposed. Fig. 4 is a photograph of a section of a crossarm showing checking of this nature. For this reason also it is better to stack alternate layers of arms at right angles with arms in both layers at close spacing, rather than to stack all arms in one direction with small spacing strips or laths between the layers as with the latter, all faces of the arms are exposed unless several spacing strips are used per layer, which is expensive. In the cross stacking method shown in Fig. 2, the arms themselves are used as spacing pieces and the reduced surface exposure ensures more even drying with less tendency to warp.



Fig. 4. CROSS-SECTION OF CROSSARM SHOWING CRACKING ALONG MEDULLARY RAYS.

3.7 The stacks should be arranged so that they are all equally exposed to weather conditions as far as possible. Placing a group of stacks in the form of a square means that stacks on the inside are less exposed than the outer stacks and dry more slowly. Furthermore, they are less readily reached when arms are being handled. Stacks should be placed in such a way that they can all be reached by trucks or lorries and that double handling of the arms will be unnecessary.

3.8 The top layers should be protected from sun and rain by a simple sloping roof made of palings, arms, or galvanised iron.

3.9 In order to obviate unnecessary disturbance of the arms during the seasoning process unseasoned arms must not be placed on the same stack as partly seasoned arms.

4. STORAGE OF ARMS IN SMALL DEPOTS.

4.1 The method described above is designed essentially for large depots where arms are stored during seasoning. The same general principles should apply in storing arms in small depots.

4.2 Arms should on no account be thrown in a heap or left lying against a fence. A crossarm stack should be provided observing the same general principles and precautions set out above.

4.3 Old partly decayed arms should not be used for supports nor should these arms be stored with new arms, owing to the danger of infecting the new arms. If it is necessary to store new and used arms together the latter, if they show the slightest evidence of decay, should be first well treated with creosote.

5. REFERENCE. PA 9601 - Measurement of Moisture Content of Crossarms.

END.